IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

In re: REMBRANDT TECHNOLOGIES, LP PATENT LITIGATION	)	**MDL Docket No. 07-md-1848 (GMS)**

REMBRANDT'S ANSWERING CLAIM CONSTRUCTION BRIEF RE '627 PATENT

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TABLE OF CONTENTS

Page

TABLE OF AUTHORITIES

PAGE(S)

CASES

I. INTRODUCTION

A. Overview

Rembrandt's claim constructions are supported directly by the language of the claims of the U.S. Patent No. 5,243,627 ("the '627 patent") and its specification. Rather than relying on extrinsic evidence, expert declarations, or numerous articles, Rembrandt has grounded its proposed constructions in the '627 patent's intrinsic evidence. Its constructions encompass the preferred embodiment, while heeding the specification's disclosures of alternative embodiments. Furthermore, Rembrandt's constructions are consistent with the constructions determined by the Texas Court in *Rembrandt Technologies, L.P. v. Comcast Corp.*, Civ. No. 2:05-CV-443 (TJW) (E.D. Tex.)

All Other Parties ("AOPs"), by contrast, propose constructions that repeatedly breach the canons of claim construction. They improperly attempt to restrict the claims to the preferred embodiment, they propose constructions that do not actually encompass the preferred embodiment, and they cloud the record with a slew of extrinsic evidence, including an expert declaration and numerous articles, rather than looking principally to the intrinsic evidence, as Rembrandt has done.

B. AOPs Fail to Follow Canons of Claim Construction

AOPs' proposed claim constructions fall into one of two categories. On the one hand, many of their constructions are veiled attempts to restrict the claims to the patent's preferred embodiment. Through use of phrases such as "[w]hat disclosure there is directly supports defendants' construction" (AOPs' Brief at 13)[1], AOPs argue that the preferred embodiment should dictate claim construction. This is improper. *Sandisk Corp. v. Memorex Prods.*, 415 F.3d

[1]"AOPs' Brief" hereinafter refers to Defendants' Opening Claim Construction Brief Concerning U.S. Patent No. 5,243,627, dated June 4, 2008 (D.I. 238).

1278, 1286 (Fed. Cir. 2008) ("it is axiomatic that without more the court will not limit claim terms to a preferred embodiment described in the specification").

On the other hand, AOPs also propose numerous terms that exclude the preferred embodiment. For instance, they propose means for interleaving signal points that fail to meet the requirements directly set forth in the claims themselves. This is equally improper. *Vitronics Corp. v. Conceptronic, Inc.* 90 F. 3d 1576, 1583 (Fed. Cir. 1996) (A claim interpretation that reads out a preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support . . . .").

AOPs argue that their constructions are supported by the intrinsic evidence, namely the '627 patent specification. But "[a]ll intrinsic evidence is not equal . . . ." *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). There is a "hierarchy" among the intrinsic evidence, and the claims are at the top of that hierarchy. *Id.* Instead of focusing on the language of the claims, AOPs focus on the language of the specification and repeatedly read limitations from the specification into the claims—another fundamental error with their constructions.

Not surprisingly, AOPs also rely upon extrinsic evidence—an expert declaration—to usher in new concepts regarding "state transitions" and "expansions" that appear nowhere in the intrinsic evidence. This reliance is especially inappropriate in these instances because their extrinsic evidence is at odds with the '627 patent specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*) (stating that a court should discount extrinsic evidence that is at odds with the intrinsic evidence).

There is also an evident lack of legal support for AOP's construction positions. Instead, their Brief is wrought with attorney argument in a veiled attempt to limit the construction of the

claims to benefit their infringement position. For instance, AOPs take the position that a signal point must be a 2-dimensional signal point and a channel symbol must be a 2N-dimensional channel symbol. (*See supra*, section II(A)(1)-(4)). Out of the four cases AOPs do cite, two of those cases are cited as justification for referencing the ATSC standard in their Brief, references that they claim are made merely "to provide context to the disputes . . . ." (AOPs' Brief at 3, n.2). It is well settled, however, that "claims may not be construed by reference to the accused device." *Neomagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002).

II. DISCUSSION

A. "signal point"

1. A "signal point" can be any dimensionality.

AOPs' propose to construe a signal point as a 2-dimensional signal point, i.e., a "point on a 2-dimensional constellation . . . ." Yet, the claims say nothing about the dimensionality of the signal points. The specification is clear: "the invention can be used with signaling schemes of any dimensionality." (Ex. 1 at 8:59-61) (emphasis added)[2]. Thus, a signal point does not have to be 2-dimensional, but can be of any dimensionality. AOPs' construction thus flatly contradicts the language of the claims and the specification.

2. AOPs' construction seeks to improperly limit the claims to the preferred embodiment.

FIG. 2 discloses a two-dimensional constellation, where points on the constellation are signal points. (Ex. 1 at 3:33-35). FIG. 2, however, is the preferred embodiment, and AOPs' construction is nothing more than an attempt to limit the claims to that preferred embodiment. This is improper. *Sandisk Corp.*, 415 F. 3d at 1286 ("it is axiomatic that without more the court will not limit claim terms to a preferred embodiment described in the specification."); *Altiris,*

[2]Exhibit 1 to Rembrandt's Opening Brief ("Ex. 1") is a copy of U.S. Patent No. 5,243,627.

Inc. v. Symantec Corp., 318 F. 3d 1363, 1372 (Fed. Cir. 2003) ("merely because the specification only describes one embodiment is not a sufficient reason to limit the claims to that embodiment"); *PHT Corp. v. Invivodata, Inc.*, Civ. No. 04-60-GMS, 2005 U.S. Dist. LEXIS 9577, *23 (D. Del. May 19, 2005) ("where a specification does not require a limitation, that limitation should not be read from the specification into the claims") (quoting *Intel Corp. v. United States Int'l Trade Comm'n*, 946 F.2d 821, 836 (Fed. Cir. 1991))

AOPs' construction is especially wrong here, where the specification generally provides for alternate embodiments by explicitly providing for "signaling schemes of any dimensionality." (Ex. 1 at 8:59-61). *See Beckson Marine v. NFM, Inc.*, 292 F.3d 718, 724 (Fed. Cir. 2002) ("this court does not construe the figures depicting a single preferred embodiment as limiting the claim terms in light of other language in the written description embracing other draining structures").

Indeed, AOPs' expert admitted that trellis-encoded signal points do not have to be 2-dimensional, but they can be 1-dimensional.

Q. Can trellis encoding be implemented with one dimensional signals?
A. Yes. Yes.

(Gitlin Dep. [3] at 72:23-25 [B043]).

3. The doctrine of claim differentiation confirms that signal points can be of any dimensionality.

The doctrine of claim differentiation confirms that signal points can be of any dimensionality. Rembrandt's asserted claims—1, 2, 9, 10, 11, 12, 19, 21 and 22—do not limit the dimensionality of the signal points. On the other hand, dependent claims, such as 3-4, 8, 13-14, 18 and 23-24, require signal points to be 2-dimensional.[4] Specifically, these claims require

[3] "Gitlin Dep." hereinafter refers to the transcript for the Richard D. Gitlin, dated June 23, 2008.

[4] Moreover, non-asserted independent claims, such as claims 5 and 15, also include language limiting channel symbols to be 2N-dimensional, thereby restricting signal points to be 2-

that channel symbols be "2N-dimensional." Here, "N" is the number of constituent signal points in each channel symbol. Thus, a "2N-dimensional channel symbol"—as required by the dependent claims—dictates that the signal points themselves be 2-dimensional. (Ex. 1 at 4:9-11 ("The concatenation of N ***two-dimensional signal points*** thus selected is the desired ***2N-dimensional channel symbol***") (emphasis added)).

Therefore, because certain claims further limit channel symbols to include signal points that are 2-dimensional, the doctrine of claim differentiation instructs that the term "signal point" is not required to be 2-dimensional. *Saunders Group, Inc. v. Comfortrac, Inc.*, 492 F.3d 1326, 1331 (Fed. Cir. 2007) ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim") (quoting *Phillips*, 415 F.3d 1303, 1314-15 (Fed. Cir. 2005)); *RF Delaware, Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263-64 (Fed. Cir. 2003) (it was error to construe 'filter bed' in claim 1 to require a 'flocculation layer' or a 'transitional layer' because such a construction "renders redundant or meaningless the limitation 'a flocculation layer' in claim 7 and the limitation 'a transitional layer' in claim 12").

4. A one dimensional "signal point" still corresponds to a "point" on a constellation.

AOPs also argue that Rembrandt's construction "removes the word 'point' from the claim term by ignoring the indisputable relationship between a 'signal point' and the points of a 'signal constellation.'" (AOPs' Brief at 12.) In other words, AOPs are suggesting that there cannot be signal point on a 1-dimensional constellation. This is just wrong. AOPs' expert

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dimensional. Applicants for the '627 patent thus clearly intended to confine the dimensionality of the signal points in specific instances, but not in others.

admitted that a one dimensional signal point—rather than being no point at all—in fact lies on 1-dimensional constellation. (Gitlin Dep. 58:11-18 [B042]; Gitlin Decl.[5] at D0029, FIG. 1.)

B. "trellis encoded channel symbol . . . comprised of a plurality of signal points"

Trellis encoded channel symbols need not be generated by one expansion. Again, AOPs attempt to improperly inject limitations into the claims not required by the claims or the specification. AOPs' construction requires "two or more signal points all selected using the same group of parallel input bits ***as expanded once*** by a trellis encoder." (Emphasis added). The only disclosure remotely addressing the notion of expansion states that "[f]or example . . . three parallel bits on lead (109) are expanded into four bits on lead (121) . . . ." (Ex. 1 at 3:60-66). Yet, as stated by the specification, this is only in an "example." Neither the specification nor the claims provide any limit on the number of expansions or the number of bits associated with an expansion. In fact, nothing in the claims even says anything about expansion. Nor is the distinction between single versus multiple expansions found anywhere in the intrinsic record.

Yet, AOPs not only wrongly inject the requirement of a "single expansion" into their construction, they misinterpret what an expansion actually is. They argue that a single expansion means adding just one extra bit to a group of bits that are input into a trellis encoder. (AOPs' Brief at 10) ("Having only one trellis expansion for an N>1 symbol is advantageous because it 'reduces the number of redundant' or expansion bits so that only 1 bit is needed for an entire symbol, instead of 1 bit for *each* signal point") (citations omitted). AOPs' argument that one expansion equals one bit is based wholly on their own extrinsic evidence. But their own evidence regarding trellis encoding actually contradicts that argument.

[5]"Gitlin Decl." hereinafter refers to the Declaration of Richard D. Gitlin, dated June 4, 2008.

The claims require only that the channel symbols are trellis encoded. Trellis coding can be of a rate $m/m+1$, which means that if m bits are input into a trellis encoder, then $m+1$ bits are output. In that case, only one bit has been added (hence the +1). AOPs' expert, however, cites an article by L.F. Wei that unequivocally states that trellis coding can be generalized "to trellis codes of rates other than $m/m+1$." (Gitlin Decl. at D0052). If it is a rate other than $m/m+1$, then it must add more than one bit. AOPs' expert himself adopts this conclusion:

> Q. And when you produce this expanded group of bits, could that expansion add more than one bit?
>
> A. . . . in Wei's last paragraph he suggests that you could.

(Gitlin Dep., 143:17-22 [B047]).

C. "stream[] of trellis encoded channel symbols"

1. There is no requirement that "each symbol's signal points are adjacent."

Rembrandt's construction is: "A sequence of trellis encoded channel symbols." To this, AOPs tack on an additional limitation: "A sequence of trellis encoded channel symbols ***in which each symbol's signal points are adjacent***." (Emphasis added). Again, neither the claims nor the specification requires this added limitation.

An analysis of the actual wording of the claims undermines AOPs' construction. The claims require that the stream of trellis encoded signal points be formed "in such a way that the signal points of each channel symbol are non-adjacent," and the "signal points of adjacent symbols in any one of said channel symbol streams are non-adjacent . . . ." (Ex. 1 at 10:16-20) (emphasis added). Thus, the inventors of the '627 patent were well aware of the term "adjacent" and how to incorporate it into the claims with respect to "adjacent symbols." Conspicuously, however, the claims only recite a non-adjacent end result for the signal points, not an adjacent

starting point. Thus, the "adjacency" requirement advanced by AOPs contradicts the language of the claims.

Further, AOPs' construction of "stream[] of trellis encoded channel symbols" requires the constituent signal points to be adjacent, while their construction of "trellis encoded channel symbol . . . comprised of a plurality of signal points," does not. Thus, AOPs not only offer constructions that contradict the intrinsic evidence, they contradict each other.

2. Nothing requires that signal points must be adjacent before becoming non-adjacent.

AOPs argue:

> If the signal points of symbols in the stream were already non-adjacent, the "stream of trellis encoded signal points" would already have been formed, and there would be no need to interleave the signal points to make them non-adjacent.

(AOPs' Brief at 15).

This argument, however, is incorrect and misses the point. AOPs improperly assume that there are only two states of "adjacency"—total adjacency and total non-adjacency. In fact, however, trellis encoding of the channel symbols partially removes some of the adjacency by interleaving the channel symbols. That solution to reducing adjacency, however, is inadequate. That inadequacy, *i.e.*, the need to further reduce the adjacency, is what the '627 solves by removing the remaining adjacency by interleaving the signal points. Thus, when AOPs assert that there "would be no need to interleave the signal points to make them non-adjacent," they simply ignore the central feature of the patent.

AOPs' argument is also wrong because its predicate is wrong—nothing requires the signal points of the channel symbols in the stream be adjacent or non-adjacent before they are interleaved. Indeed, they can be generated already interleaved.

The patent's preferred embodiment teaches that signal points are generated in a certain order. *See* FIG. 3, lead (325). When AOPs speak of the signal points of each channel symbol being "adjacent," it is this order of which they are speaking. Only after arranged in this order, they argue, can the signal points be re-arranged so that they are no longer in this order, and thus no longer "adjacent." (AOPs' Brief at 15). Hence their argument, which asks "how can you make points non-adjacent that were not adjacent to begin with?"

This argument, however, is based only on the preferred embodiment, which sets forth an order: first, channel symbols are generated with signal points lined up adjacent to one another, then those signal points are themselves interleaved. It is this order that AOPs argue is tracked in the claims. But nothing in the claims requires this exact order. Nor does any evidence in the specification require this exact order. Indeed, AOPs' expert admitted that the order set forth in the preferred embodiment is not required, but the invention can work in a different order than that set forth in FIG. 3. (Gitlin Dep. at 173:20—174:4 [B053-54]).

Nor does any intrinsic evidence require that channel symbols must be generated *before* their signal points are interleaved. Rather, signal points can be generated and interleaved *at the same time*. Indeed, FIG. 3 teaches that the first time channel symbols are generated, on lead (325), they are already interleaved. And because channel symbols are comprised of constituent signal points, at the point those signal points are first generated, also on lead (325), the signal points ***among successive*** channel symbols are also generated already interleaved. Thus, the preferred embodiment itself actually teaches that signal points (among successive channel symbols) are generated and interleaved simultaneously.

AOPs' insistence, however, that signal points ***belonging to a*** channel symbol cannot be interleaved until the last instance is just their attempt to import the preferred embodiment into the

claims. Indeed, AOPs' expert admitted that by using software or a programmed processor, each of these steps can effectively be combined into a single device. (Gitlin Dep. at 99:23—100:5 [B045-46]; 170:21—171:17 [B050-51]). This is consistent with the specification. (Ex. 1 at 9:61-66)). In that case, the signal points ***belonging to a*** channel symbol can be generated and interleaved at the same time—they can be generated interleaved.

Thus because neither the claims nor the specification require any order, the order set forth in the preferred embodiment should not be imported into the claims. *See Baldwin Graphic Sys. v. Siebert, Inc.*, 512 F.3d 1338, 1346 (Fed. Cir. 2008) (holding disclosure that "[a] cleaning fabric with a reduced air content is wrapped around the core to form a fabric roll" did not require "that air content reduction must occur prior to winding"); *Altiris, Inc.*, 318 F. 3d at 1371 ("Looking . . . to the written description, it clearly only discusses a single 'preferred' embodiment in which the 'setting' step occurs after the 'testing' step and before the 'booting normally' step. Nowhere, however, is there any statement that this order is important, any disclaimer or any other order of steps, or any prosecution history indicating a surrender of any other order of steps.").

AOPs' argument imports the order set forth in the preferred embodiment into the claims. Only by doing so can they ask the rhetorically compelling question "how can something be made non-adjacent if it doesn't start out adjacent?" But what they ignore is that the specification does not eliminate the possibility that signal points are generated already interleaved. In that case, they never have to be adjacent before they become non-adjacent, and that means that requiring adjacency is an unnecessary limitation, not required by the intrinsic evidence.

D. "means for generating a plurality of streams of trellis encoded channel symbols in response to respective portions of said input information"

AOPs' construction includes only "parallel trellis encoders" with an "encoder that generates signal points." This construction, however, is only one example of a distributed trellis encoder, as set forth in the '627 specification. The patent's specification discloses alternative embodiments. It teaches that "those skilled in the art will recognize that the function of any one or more of those elements [disclosed elements of the modem transmitter and receiver] could be implemented with any appropriate available technology, including, one or more appropriately programmed processors, digital signal chips, etc." (Ex. 1 at 9:56-61). It thus provides that the "means for generating a plurality of streams of trellis encoded channel symbols" is not confined to trellis encoders and an encoder. Nor must the trellis encoders be parallel. Nor must the encoder and the trellis encoders be separate, rather than combined into a single device using a digital signal chip.

Indeed, AOPs' expert admits this:

> Q. So trellis encoding and the bit mapping into signal points can all be implemented in software?
>
> A. I wouldn't -- you drew a distinction which I don't accept. Trellis encoding includes the mapping into the signal points.
>
> Q. And this bit mapping together with the encoding or expansion of the input bits can be performed in software?
>
> A. It depends on the rates in which you're processing. So if you're processing at a rate where the chip or the ASIC can do it. You can do this all in one device.

(Gitlin Dep. at 98:4-16 [B044]).

AOPs' construction thus excludes embodiments of the invention specifically disclosed by the specification.

E. "interleaving the signal points of said generated channel symbols to form said (a) stream of trellis encoded signal points"

AOPs' construction contradicts the intrinsic evidence. The claims require that the signal points are interleaved in two different ways. Claim 1 states that "said interleaving being carried out in such a way that":

> (i) "the signal points of each channel symbol are non-adjacent in said stream of trellis encoded signal points and"
>
> (ii) "such that the signal points of adjacent symbols in any one of said channel symbol streams are non-adjacent in said stream of trellis encoded signal points."

The first way requires that the signal points in each channel symbol are not transmitted next to each other—thus signal points ***belonging to a*** channel symbol are non-adjacent. The second way requires that the signal points from neighboring channel symbols are not transmitted next to each other—thus signal points ***among successive*** channel symbols are non-adjacent.

By its own terms, AOPs' construction fails to interleave signal points in both of the foregoing ways. Their construction provides: "Separating the adjacent signal points *of each* generated trellis encoded symbol using other signal points." (Emphasis added). At best, it only interleaves signal points ***belonging to a*** channel symbol. But interleaving signal points *of each* channel symbol will not simultaneously interleave signal points ***among successive*** channel symbols. Indeed, the specification provides an example of this failure in FIG. 5, Lines IV, and the attendant discussion at column 7, lines 44 through 54 (Ex. 1 at 7:44-54).

In addition, AOPs' construction also fails to even accomplish the first way—interleaving the signal points ***belonging to a*** channel symbol. If only *adjacent* signal points are separated, signal points from the same channel symbol may still be transmitted next to each other. For instance, suppose a channel symbol has four signal points, [a,b,c,d]. If only "adjacent signal points of each generated trellis encoded symbol [are separated] using other signal points," as

provided by AOPs' construction, then what occurs is: [a,b,c,d] **à** [c,a,d,b]. Whereas signal points that are originally adjacent—ab, bc, and cd—have been separated so that they are no longer adjacent, signal points from the same channel symbol remain nevertheless right next to each other. Signal points ***belonging to a*** channel symbol are thus <u>not</u> interleaved. Thus, the principal purpose of the invention, to extend protection to "burst error" which might be contained in a channel symbol, is not accomplished.

Finally, AOPs' construction requires that the signal points are adjacent before they are interleaved. As discussed above, this is nothing more than grafting the preferred embodiment onto the claims. *Sandisk Corp.*, 415 F.3d at 1286 ("it is axiomatic that without more the court will not limit claim terms to a preferred embodiment described in the specification.").

AOPs further argue that Rembrandt's construction simply restates the claim language. This argument is clearly not correct. Rembrandt's construction is: "To interleave signal points of trellis encoded channel symbols to form a stream of trellis encoded signal points." The remainder of the claim language defines what such interleaving is to accomplish:

> said interleaving being carried out in such a way that the signal points of each channel symbol are non-adjacent in said stream of trellis encoded signal points and such that the signal points of adjacent symbols in any one of said channel symbol streams are non adjacent in said stream of trellis encoded signal points.

See e.g., Claim 1.

AOPs also argue that Rembrandt's construction could "erroneously" mislead someone "to believe that simply interleaving the symbols themselves satisfies this limitation, since symbols are composed of signal points." (AOPs' Brief at 16). This argument is clearly wrong because one would have to ignore the remainder of the claim. *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1299 (Fed. Cir. 2003) ("the context of the surrounding words of

the claim also must be considered in determining the ordinary and customary meaning of those terms").

F. "means for interleaving the signal points of said generated channel symbols to form said (a) stream of trellis encoded signal points"

1. AOPs' construction excludes the preferred embodiment.

As discussed above, the specification requires that the signal points are interleaved in two different ways. Moreover, it discloses structure to accomplish both ways. On the one hand, a signal point interleaver (341 or 641) interleaves signal points ***belonging to a*** channel symbol: a "signal point interleaver . . . cause[s] the signal points from the channel symbol to be non-adjacent." (Ex. 1 at 7:10-13). On the other hand, a switching circuit (337) interleaves signal points ***among successive*** channel symbols: "data word outputs of the trellis encoders are . . . supplied to QAM encoder 324 by switching circuit . . . [to form] interleaved streams of trellis encoded channel symbols." (Ex. 1 at 5:13-28).

AOPs' construction, however, only accomplishes the first way of interleaving the signal points—it is limited to a signal point interleaver. It is, therefore, inconsistent with the express requirement of the claims, and it eliminates the preferred embodiment from the claims. *See Vitronics Corp.*, 90 F.3d at 1583 (A claim interpretation that reads out a preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support . . . ."); *see also Data Line Corp. v. Micro Technologies, Inc.*, 813 F.2d at 1196, 1201 (Fed. Cir. 1987) (stating that a means-plus-function claim must be construed to cover the disclosed structure and equivalents thereof).

2. The specification teaches a programmed processor.

AOPs also argue that a "processor programmed to interleave the signal points" is not a corresponding structure for the recited function of deinterleaving. To support their position, they contend that "the specification never says this" and that it provides "no algorithm" for doing so. (AOPs' Brief at 18). To support their argument, AOPs incorrectly cite *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323 (Fed. Cir. 2008).

In *Finisar*, the Federal Circuit noted the test for computer-implemented means-plus function claims where the disclosed structure is a computer programmed to implement an algorithm: "the patent must disclose, at least to the satisfaction of one of ordinary skill in the art, enough of an algorithm to provide the necessary structure under § 112, ¶ 6." *Id.* at 1340. The court also pointed out that this test "does not impose a lofty standard" and that "a patentee [may] express that algorithm in any understandable terms including as a mathematical formula, in prose…, or as a flow chart, or in any other manner that provides sufficient structure." *Id.* at 1340-41 (citing *In re Freeman*, 573 F.2d 1237, 1245-46 (C.C.P.A. 1978) (emphasis added).

In *Finisar*, the disclosed structure was simply: "software" performing the recited function, which is why the court held the patent "provides no algorithm or description of structure corresponding to the claimed function." *Finisar Corp.*, 523 F.3d at 1340. Here, by contrast, the '627 specification expressly recites two functions to be accomplished by "a programmed processor": interleaving signal points both ***belonging to a*** channel symbol and ***among successive*** channel symbols. (Ex. 1 at 1:59-62, 5:13–28, 7:58-64, 9:61-66). Further, as discussed above, it specifies the structure for carrying out these functions: (i) signal points ***belonging to a*** channel symbol are interleaved through use of the signal point interleaver; and (ii) signal points of ***among successive*** channel symbols interleaved by a switching circuit. (Ex. 1 at 5:13–28, 7:58-64, 1:59-62). And the specification explains how the foregoing structures

achieve each interleaving function. (Ex. 1 at FIG. 3). The '627 patent's intrinsic evidence thus teaches the structure necessary for one of ordinary skill in the art to implement the recited functions. Indeed, AOPs' expert admitted "[t]hat's generally the way these systems are built today with DSP software." (Gitlin Dep. at 170:21—171:17 [B050-51]). Thus, Rembrandt's construction is properly supported by the '627 patent specification.

G. "deinterleaving the interleaved signal points to recover said plurality of streams of trellis encoded channel symbols"

Deinterleaving is a reversal of the entire interleaving process. AOPs argue, however, that "this step [only] reverses the signal point interleaving . . . ." (AOPs' Brief at 17). Just like with "interleaving," this construction excludes the preferred embodiment and defines the term in a manner that is inconsistent with the remainder of the claim language, and even inconsistent with their own expert's opinion.

The specification teaches that signal points ***belonging to a*** channel symbol are deinterleaved: "received signal points are deinterleaved in signal point interleaver 441, which provides the *opposite function* of interleaver 341 in the transmitter." (Ex. 1 at 5:67-6:2) (emphasis added). It also teaches that signal points ***among successive*** channel symbols are deinterleaved: "[t]he received signal points on lead 442 are . . . distributed to switching circuit 431 . . . to a distributed Viterbi decoder . . . ." (Ex. 1 at 6:12-20). AOPs' construction only deinterleaves signal points ***belonging to a*** channel symbol. It fails to deinterleave signal points ***among successive*** channel symbols. Their construction thus once again is inconsistent with the express language of the claims of the patent. AOPs' expert admitted that the switching circuit (431) and signal point interleaver (441) perform the opposite function of what was done in the transmitter stage. Indeed, he flatly stated:

> Q. I'm sorry, not switching -- the signal point interleaver, 441, and the switching circuit,431, perform the opposite function of what was done in the trellis -- in the transmitter stage?
>
> (The witness reviews document.)
>
> A. You said [signal point interleaver] 441 and [switching circuit] 431?
>
> Q. Yes.
>
> A. They do the deinterleaving.

(Gitlin Dep. at 171:24—172:7 [B051-52]).

Moreover, channel symbol deinterleaving is also required by the remainder of the claim language which states that deinterleaving must "recover [a] plurality of streams of trellis encoded channel symbols," a function that is performed by switching circuit 431 in the preferred embodiment of the '627 patent. Accordingly, because AOPs' construction fails to consider, and is inconsistent with, the remainder of the claim language, it should be dismissed. *See Brookhill-Wilk*, 334 F.3d at 1299 ("While certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms.") (citing *Hockerson-Halberstadt, Inc. v. Converse Inc.*, 183 F.3d 1369, 1374 (Fed. Cir. 1999)).

H. "means for deinterleaving the interleaved signal points to recover said plurality of streams of trellis encoded channel symbols"

1. A "switching circuit" corresponds to the function of deinterleaving.

As with "means for interleaving," AOPs' construction is inconsistent with the language of the claims of the patent and excludes the preferred embodiment. AOPs' construction identifies only "Signal Point Interleaver 441 including delay element 4411 or Signal Point Deinterleaver 741 including delay elements 7411, 7412 and 7413." By not including a switching circuit, their construction does not cover deinterleaving the signal points ***among successive***

channel symbols. Once again, AOPs propose a construction that does not include the preferred embodiment.

Additionally, the claims themselves make clear that in order to "recover [a] plurality of streams of trellis encoded channel symbols," deinterleaving must be performed ***among successive*** signal points by switching circuit 431 prior to being fed into the multiple decoders. By eliminating switching circuit 431 from their structural construction, AOPs fail to incorporate this aspect of the deinterleaving process, which is dictated by the claims themselves. Therefore, because means-plus-function structure does not encompass the structure disclosed in the specification that corresponds to the recited function, AOPs' construction is incorrect, and should be dismissed. *See Creo Prods., Inc. v. Presstek, Inc.*, 305 F.3d 1337, 1345-46 (Fed. Cir. 2002).

2. The specification recites the structure necessary for a computer to implement the deinterleaving function.

AOPs again argue that a processor programmed to deinterleave the signal points is not a corresponding structure for the recited function of deinterleaving. As discussed above, their reliance on *Finisar* is misplaced. The specification recites not only the function to be accomplished by a programmed processor—deinterleaving signal points both ***belonging to a*** channel symbol and ***among successive*** channel symbols—but also structure for accomplishing these functions—signal point interleaver (441) and switching circuit (431). (Ex. 1 at 5:67-6:2, 6:12-20, FIG. 4). Thus, AOPs' construction fails to encompass all disclosed embodiments.

I. "distributed Viterbi decoder"/"distributed Viterbi decoder for recovering (to recover) said information from the deinterleaved signal points"

A "distributed Viterbi decoder" is not required to receive all signal points of a channel symbols before deciding their values. AOPs' construction requires that a distributed Viterbi decoder must receive all the signal points that make up a channel symbol "before deciding their

values together using the Viterbi algorithm." The specification expressly provides to the contrary:

> Without having received all of the signal points of the signal points of a channel symbol, one cannot take advantage of the accumulated path metric information but, rather, ***one must rely on the so-called raw sliced values, which is less accurate.***

(Ex. 1 at 8:47-51) (emphasis added). The patent thus states that the Viterbi decoders can in fact begin deciding the values of the signal points before it receives all those belonging to a single channel symbol. It thus provides an alternative embodiment not covered by AOPs' proposed construction. *Beckson Marine*, 292 F.3d at 724 ("this court does not construe the figures depicting a single preferred embodiment as limiting the claim terms in light of other language in the written description embracing other draining structures"). Indeed, AOPs' expert admitted this alternative means of decoding was possible. (Gitlin Dep. at 154:16—155:10 [B048-49]).

The claims say nothing about how the decoder is required to "recover[] [] information from the deinterleaved signal points"—only that it be a Viterbi decoder. AOPs' construction thus once again improperly injects unnecessary limitations into the claims.

J. "receiver apparatus"

AOPs' construction imports the preferred embodiment into the term. The receiver in FIG. 4 includes a demodulator, but there is nothing in the specification that requires that a "receiver apparatus" contains a demodulator. Once again, the intrinsic evidence upon which AOPs rely is the preferred embodiment.

Further, the language in claim 9 surrounding the term "receiver apparatus" further modifies the term to explain that it "recover[s] information from a received stream of trellis encoded signal points . . . ." Thus, AOPs injected limitation is unnecessary in light of the claim language itself. *Brookhill-Wilk 1*, 334 F.3d at 1299 ("the context of the surrounding words of the

claim also must be considered in determining the ordinary and customary meaning of those terms").

III. CONCLUSION

For all the foregoing reasons, Rembrandt's proposed constructions should be adopted.

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CERTIFICATE OF SERVICE

I, Collins J. Seitz, Jr., hereby certify that on the 2nd day of July, 2008, a true copy of the foregoing document was electronically filed with the Clerk of the Court using CM/ECF which will send notification of such filing to the following and the document is available for viewing and downloading from CM/ECF:

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